



26 FEB 1959

(b) (6)

(b) (6)

22



FF4-1/3040

Serial:

80/

564

JAN 20 1959

SPECIAL HANDLING REQUIRED IN ACCORDANCE  
WITH PARAGRAPH 65, OPNAVINST 3750.6C

FIFTH ENDORSEMENT on VMP(AW)-513 AAR ser 2-58 concerning F4D-1 BUNO 139106  
accident occurring 19 November 1958, pilot (b)

From: Commander Naval Air Force, Pacific Fleet  
To: Chief of Naval Operations (OP-57)  
Via: (1) Chief, Bureau of Aeronautics (AER-21)  
(2) Commander, U. S. Naval Aviation Safety Center

Subj: VMP(AW)-513 AAR ser 2-58

1. Forwarded, concurring in the conclusions and recommendations of the  
Aircraft Accident Board, and in the remarks contained in subsequent  
endorsements.

(b) (6)

(b) (6)

By direction

Copy to:  
NAVAVSAPCEN (2) (Airmail)  
CMC (CODE AAP)  
CINCPACFLT  
CG, AIRPMFPAC  
CG, 3rd MAW  
CO, MAG-15  
CO, VMP(AW)-513  
BAR, EL SEGUNDO  
BAR, EAST HARTFORD  
OIC, MPU, EL CENTRO

3

SPECIAL HANDLING REQUIRED  
IN ACCORDANCE WITH PARA 65  
OPNAVINST 3750.6C

ORIGINAL

FTL-5

11:phw  
3750/1

19 JAN 1959

FOURTH ENDORSEMENT on VMF(AW)-513 AAR ser 2-58 concerning FAD-1, BuNo 139106,  
accident occurring 19 November 1958, pilot (b)

From: Commanding General, Aircraft, Fleet Marine Force, Pacific  
To: Chief of Naval Operations (Op-57)  
Via: (1) Commander, Naval Air Force, Pacific Fleet  
(2) Chief, Bureau of Aeronautics (MA-61)  
(3) Commander, U. S. Naval Aviation Safety Center

Subj: Major Aircraft Accident Report, case of Captain (b) (6)  
(b) (6), USMC

1. Forwarded concurring with the report.

*[Signature]*  
S. S. LICK

Copy to:  
CNC (AAP)  
BuAer (MA-61)  
NavAvnSafCen (2)  
CpnNavAirPac  
ClnCPacFlt  
CG, 3dMAW  
CG, MAG-15  
CO, VMF(AW)-513  
DinC, NPU, El Centro  
BAR, East Hartford, Conn.  
BAR, El Segundo, Calif

ORIGINAL

SPECIAL HANDLING REQUIRED  
in accordance with para 65  
of ONAV INST 3750.6C

61:OEM:kcf

DEC 24 1958

THIRD ENDORSEMENT on VTF(AV)-513 AAR ser 2-58 concerning F4D-1,  
139106, accident occurring 19 November 1958, pilot (b) (6)

From: Commanding General, 3d Marine Aircraft Wing  
To: Chief of Naval Operations (OP-57)  
Via: (1) Commanding General, Aircraft, Fleet Marine Force,  
Pacific  
(2) Commander, Naval Air Force, Pacific Fleet  
(3) Chief, Bureau of Aeronautics (MA-61)  
(4) Commander, U. S. Naval Aviation Safety Center

Subj: VTF(AV)-513 AAR ser 2-58

1. Forwarded concurring in the report and first endorsement, as modified by the second endorsement.
2. Pilot factor appears to be the dominant factor in this major aircraft accident. The truly professional pilot, relatively experienced in model, upon observing the unusual internal fuel warning light of about 1500 pounds, enclosure (5), would have directed his primary attention to fuel monitoring/fuel management rather than to five additional minutes of section tactics. Had this been done, the malfunction apparently could have been analyzed by the pilot in sufficient time to effect a safe precautionary landing at home base, thereby saving a valuable weapons system unit.
3. All tactical aircraft in our inventory are subject to occasional fuel transfer malfunction. To eliminate accidents similar to this one, unit commanders must take positive and persistent measures to impress each pilot with malfunction potential and associated pilot responsibility regarding timely analysis and corrective action. Concurrently, existing policy re ejection must be presented so that each pilot recognizes there is a proper time/altitude for ejection whenever corrective action fails or an attempted landing is considered inadvisable.
4. Doctrine requires the wearing of life jackets by pilots of Wing units on all flights in tactical aircraft operating from MCAS El Toro.
5. Helicopter rescue was effected by pilots and crew of HRL-362. The Helicopter Rescue Report, referred to as enclosure (9), has been submitted direct and is identified as CG, MCAS El Toro Helicopter Rescue Report 2-58 of 19Dec58.

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SPECIAL HANDLING REQUIRED  
in accordance with para 65  
of UPMNAV INST 3750.5C

61:CEM:kof  
DEC 24 1958

6. The following additional administrative errors are noted:

a. Part I, Section A, Item 11: location should be expressed as "Lat. 33.5N, Long. 117.8W".

b. Part I, Section A, Item 18 should read "4-In Flight".

*T. G. Ennis*

T. G. ENNIS

Copies to:

CMC (Code AAP)

Bulder (MA-61)

NavAvnSafCen (2 air mail)

CinCPacRtb

ComNavAirPac

CG, AirFMFPac

CG, JNAS El Toro, Calif.

BAR, East Hartford, Conn.

BAR, El Segundo, Calif.

CIS, NPU, NAS El Centro, Calif.

CO, MAG-15 (6)

CO, MAG-33 (6)

CO, NTCG-37 (4)

CO, PAC(HR)(L)-36 (8)

CO, MAG-8

CO, VME(AI)-513

CO, VME(LI)-362

Wg 6-3

WgairtMaintO

6

(2)

ORIGINAL



ORIGINAL

SPECIAL HANDLING REQUIRED IN ACCORDANCE  
WITH PARAGRAPH 65; OPNAVINST 3750.60

AvnSafO:JKD:vr  
A25

DEC 15 1958

SECOND ENDORSEMENT on VMF (AW)-513 AAR serial 2-58 concerning F4D-1  
BuNo 139106 accident occurring 19 November 1958, pilot (b)

From: Commanding Officer, Marine Aircraft Group-15  
To: Chief of Naval Operations (OP-57)  
Via: (1) Commanding General, 3d Marine Aircraft Wing  
(2) Commanding General, Aircraft, Fleet Marine Force, Pacific  
(3) Commander, Naval Air Force, Pacific Fleet  
(4) Chief, Bureau of Aeronautics (MA-61)  
(5) Commander, U.S. Naval Aviation Safety Center

Subj: Major Aircraft Accident Report, Case of Captain (b) (6)  
(b) (6) USMCR

1. Forwarded, concurring with the comments, conclusions and recommendations of the Aircraft Accident Board Report and the first endorsement.
2. This report is re-numbered as VMF(AW)-513 AAR serial 2-58. Records available to VMF(AW)-513 when they re-formed did not indicate a previous accident this calendar year.
3. It is S.O.P. for all pilots in this command to wear life jackets on all flights from this base.
4. It is believed that Crash and Rescue should not be checked in Part II Section B1 as these facilities did not have any effect on the accident.
5. The following administrative errors are noted;
  - a. The comments on the effectiveness of personal safety equipment should have been made in the Analysis Section instead of the Investigation Section.
  - b. Search and Rescue facilities should have been discussed in the Analysis Section instead of the Investigation Section.

*R. M. Huizenga*  
R. M. HUIZENGA

Copies to:  
BuAer (MA-61)  
CMC (Code AAP)  
CinCPacFlt  
ComNavAirPac  
CG, AirFMFPac  
CG, 3dMAW  
OinC NPU, El Centro  
ComAvnSafCen (2cc Air Mail)

BAR, East Hartford  
Bar, El Segundo  
CO, VMF(AW)-513  
FILE

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SPECIAL HANDLING REQUIRED IN ACCORDANCE  
WITH PARAGRAPHS 65; OPNAVINST 3750.6G

AvnSafO:JFT:mwm  
9 December 1958

FIRST ENDORSEMENT on VMF(AW)-513 A/R serial 1-58 concerning F4D-1 BuNo.  
139106 accident occurring 19 November 1958, pilot (b)

From: Commanding Officer, MARALLWEAFITRON FIVE ONE THREE

To: Chief of Naval Operations (OP-57)

Via: (1) Commanding Officer, Marine Aircraft Group-15  
(2) Commanding General, 3d Marine Aircraft Wing  
(3) Commanding General, Aircraft, Fleet Marine Force, Pacific  
(4) Commander Naval Air Force, Pacific Fleet  
(5) Chief, Bureau of Aeronautics (MA-61)  
(6) Commander, U.S. Naval Aviation Safety Center

Subj: Major Aircraft Accident Report, Case of Captain (b) (6)  
(b) (6) USMCR

1. Comment number 1 is concurred in. In that the aircraft was not recovered it is impossible to determine the cause of the fuel system malfunction.
2. Comment number 2 is concurred in. The pilot erred in failing to monitor his internal fuel state more closely. Because of the fact that much of the fuel is carried externally and since the fuel consumption while using afterburner is very high, constant monitoring of the internal fuel state is mandatory.
3. A recommendation to prevent future fuel system malfunctions is not made as stated by the board (recommendation 1) since the cause of the malfunction was not determined.
4. The board's recommendation number 2 for the incorporation of a low fuel quantity light in the F4D-1 is concurred in. If a warning light had been installed in the subject aircraft the pilot's attention would have been directed to the fuel transfer malfunction in sufficient time to land safely.
5. The following is in reference to the board's recommendation number three. The importance of constantly monitoring the internal fuel state while transferring has been stressed during pilot indoctrination. A renewed emphasis on this subject has been effected so that constant attention to the fuel system will be paramount in each pilot's mind regardless of the flight maneuvers involved.
6. The pilot's failure to wear a life jacket did not contribute to the accident but could easily have cost him his life. Hereafter life jackets will be worn on every flight from this base.
7. The failure of the life raft is being reported by separate correspondence.

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8. There is nothing in the pilot's history indicative of a deficiency as a pilot. He has had no previous accidents. He has considerable flight experience in jet aircraft (TV-2, FOF-5, F3D, F4D-1) and has proven to be a competent aviator. His actions have been mature and responsible.

9. A separate legal investigation has not been ordered as a result of the accident.

*L. D. GROW*

L. D. GROW

Copies to:

BuAer (MA61)  
CMC (Code AAP)  
CinCPacFlt  
ComNavAirPac  
CG, AirFMFPac  
CG, 3d MAW  
CO, MAG-15  
CinC NPU, El Centro  
ComAvnSafGen (2cc AirMail)  
BAR, East Hartford  
BAR, El Segundo  
File

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SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH  
PARAGRAPH 65 OPNAV INST 3750.6C

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PART I - GENERAL

1. AIRCRAFT ACCIDENT BOARD CONVENED BY:

MARLINWAFITRON FIVE ONE THREE

1. TO:

CHIEF OF NAVAL OPERATIONS (Op-57)

6. VIA: (1) CO, MAG-15

(2) CO, 3dMAW

(3) CO, AirFMFthd

(4) ComNavAirPac

(5) BuAer (MA-61)

(6)

Lost Commander, U.S. NAV. AV. SAFETY CENTER

7. REPORTING CUSTODIAN (if different than item number 1)

2. DATE OF ACCIDENT: 19Nov58

3. AAR SERIAL NO.: 1-58

8. ENCLOSURES: (1) M.O.R. (Original only)

(2) Flight Schedule 19Nov58

(3) Plane Captain's Statement

(4) Dispatches (a&b)

(5) Pilot's Statement

(6) Wingman's Statement

(7) Maintenance Officer's Statement

(8) Resume of Pilot's History

(9) Helicopter Report (to be forwarded

10. ACTIVITY OPERATING AIRCRAFT (if different than item 7) at later date)

9. KIND OF FLT.: 1. 121

2. DAWN ☐ DAY ☒ NIGHT ☐

13. PLACE OF LAST TAKE-OFF:

MCAS, El Toro (Santa Ana), California

14. TYPE

CLEARANCE:

☐ IFR ☒ VFR

☒ LOCAL

☐ OPERATIONAL

☐ AIRWAYS

☐ DIRECT

☐ OTHER

16. TIME IN FLT.: 0+35

17. TYPE ACCIDENT:

0-6 Abandoned Aircraft

19. MODEL:

F4D-1

20. SERIAL NO.: 139706

21. DAMAGE TO AIRCRAFT:

22. DOL. COST: 950,000

23. AIRSPEED (kt): 20,450

24. LIST MODEL, SER. NO., REPORTING CUSTODIAN AND DAMAGE CLASSIFICATION OF ANY OTHER A/C INVOLVED (complete separate OPNAV Form 3750-1 for each A/C)

PERSONNEL:  
PILOT TYPE ROSTER  
AT TIME OF  
ACCIDENT

NAME (last, first, and middle initial)  
(b) (6)

GRADE  
Capt.

UNIT  
(b) (6) (b)

DATE  
90 Oct 57

AGE  
(b) (6)

28

CO-PILOT

B. PER-  
SONNEL

9. OPERATIONAL FLT. TRAINER  
AVAILABLE? ☒ USED? ☐

10. UNIT TO WHICH ATTACHED

11. TYPE INSTRUMENT CARD

PILOT

☒ YES ☐ NO

☒ YES ☐ NO

VMF(AW)-513

☒ STANDARD

☐ SPECIAL

CO-PILOT

☐ YES ☐ NO

☐ YES ☐ NO

☐ STANDARD

☐ SPECIAL

ITEM

PILOT

STU-  
DENT

ITEM

PILOT

CO-  
PILOT

STU-  
DENT

ALL MODELS

511.8

OFT/CPT

CV LANDINGS DAY/NIGHT

0/0

ALL MODELS IN LAST 12 MOS.

194.3

FCLP LANDINGS DAY/NIGHT

54/0

ALL MODELS IN LAST 3 MOS.

42.8

INSTRUMENT HOURS, LAST 3 MONTHS

9.5

ALL SERIES THIS MODEL

59.9

9/0

NIGHT HOURS, LAST 3 MOS.

0

ALL SERIES THIS MODEL, LAST 12 MONTHS

59.8

9/0

(for accidents only) TOTAL JET PILOT HOURS

280.9

ALL SERIES THIS MODEL, LAST 3 MONTHS

42.8

3/0

GIVE LAST FLIGHT, ALL SERIES THIS MODEL

11/18/58

NAME (last, first, and middle initial)

GRADE

UNIT

DATE

AGE

139706

139706

139706

139706

X-400X

CAPT

(b) (6)

VMF(AW) 513

D

pilot

cpt.

SECTION A - IDENTIFICATION

AIRCRAFT

SECTION B - PERSONNEL INFORMATION

15. ALL PER-  
SONNEL

ORIGINAL

(if additional space is necessary, attach additional sheet(s))

16. SIGNATURE OF PILOT  
17. SIGNATURE OF COMMANDER  
18. SIGNATURE OF WITNESS



## AIRCRAFT ACCIDENT REPORT

OPNAV REPORT 3750-1

1. CEILING 2. VISIBILITY 3. WIND DIRECTION AND VELOCITY 4. TEMPERATURE 5. GUSTS, RUNWAY 6. ALTITUDE SETTINGS

None 30 miles

7. OTHER WEATHER CONDITIONS (winds aloft, icing levels, state of sea, etc., if pertinent to accident)

## Contributing

ITEM	YES	ITEM	YES
PILOT ERROR FACTOR	X	LANDING SIGNAL OFFICER	
CREW ERROR		MATERIAL FAILURE OR MALFUNCTION	X
SUPERVISORY PERSONNEL		OTHER PERSONNEL ERROR	
MAINTENANCE PERSONNEL		Specific	
SERVICING PERSONNEL		MATERIAL MALFUNCTION	X
		ROLLING AND PITCHING DECK/ROUGH SEAS	
		ADMINISTRATIVE ERROR	
		AIRPORT OR CARRIER FACILITIES	
		UNDETERMINED	
		WEATHER	
		OTHER, Specify	

FOR ACCIDENTS ABOARD DEPLOYED CARRIERS (Complete following Section on Pilot)

1. DATE DEPLOYED	2. DAY-HOURS/LANDINGS LOGGED SINCE DEPLOYED	3. DAY-HOURS/LANDINGS LOGGED LAST 30 DAYS
X	X	X
4. INSTRUMENT HRS. LOGGED SINCE DEPLOYMENT	5. NIGHT-HOURS/LANDINGS LOGGED SINCE DEPLOYED	6. NIGHT-HOURS/LANDINGS LOGGED LAST 30 DAYS
X	X	X

## PART II - MAINTENANCE MATERIAL AND FACILITIES DATA

DATE OF MANUFACTURE	SERVICE TOUR	MONTHS IN THIS TOUR	TOTAL NO. OF OVERHAULS	FLIGHT HRS. SINCE LAST OVERHAUL	FLIGHT HRS. SINCE ACCEPTANCE	TYPE CHECK LAST PERFORMED	FLIGHT HRS. SINCE LAST CHECK	NO. OF DAYS SINCE LAST CHECK
6-17-58	1	4	0	0	43.2	PFM	0	1
	ENGINE MODEL	SERIAL NO. OF ENGINE						
9-9-57	J-57-P8	F627025	0	0	53.1	PFM	0	1

a. DID EXPLOSION OCCUR IN FLIGHT? ☐ YES ☒ NOb. DID EXPLOSION OCCUR IN FLIGHT? ☐ YES ☒ NO

c. CHECKED BY TABLE

d. HAS BEEN REQUESTED? ☐ YES ☒ NO

e. FAILED COMPONENTS INVOLVED

f. CHECKED BY TABLE

g. CHECKED BY TABLE

h. CHECKED BY TABLE

i. CHECKED BY TABLE

j. CHECKED BY TABLE

k. CHECKED BY TABLE

l. CHECKED BY TABLE

m. CHECKED BY TABLE

n. CHECKED BY TABLE

o. CHECKED BY TABLE

p. CHECKED BY TABLE

q. CHECKED BY TABLE

r. CHECKED BY TABLE

s. CHECKED BY TABLE

t. CHECKED BY TABLE

u. CHECKED BY TABLE

v. CHECKED BY TABLE

w. CHECKED BY TABLE

x. CHECKED BY TABLE

a. ALTITUDE AT MALFUNCTION

b. AIR SPEED (Kts)

c. OPERATING TEMPERATURE

d. WEIGHT OF AIRCRAFT

e. CG% MAC

f. KIND OF FUEL

g. FUEL PRESSURE

h. EVIDENCE OF FUEL CONTAMINATION

i. CAUSE OF ENGINE FAILURE OR FLAMEOUT

j. FUEL CONTROL REGULATOR/CARBURETOR (List Stock and Ser. nos., give time since)

k. EXTERNAL STORES ABOARD A/C

l. new or overhauled

m. new or overhauled

JF012-2 506721118 9973 60.1 (2) 300 gal. drop tks.

(if additional space is necessary, attach additional sheet(s))

SPECIAL HANDLING REQUIRED  
IN ACCORDANCE WITH PARA  
M. OPNAVINST 3750.1C



PART V. - The Accident

At approximately 0910U on the morning of 19 November 1958, aircraft F4D-1, BuNo 139106, hereafter referred to as WF-3, became airborne at MCAS El Toro (Santa Ana), California on a scheduled section tactics flight (Enclosure (2)). Enclosure (3) states that daily pre-flight inspection of WF-3 was completed at 0730U and that the aircraft was ready for flight. The aircraft was accepted for flight by Capt. (b) (6) USMC, (b) (6) at 0845U.

WF-3 became airborne at MCAS, El Toro with full internal and full external fuel which amounts to a total of 8060 pounds.

At approximately 0940U, some 25-30 minutes after take-off, Capt. (b) (6) noticed he had 2200 pounds of fuel remaining in his external tanks, but was at a low fuel state in his main fuel tanks. An attempt was made to return to MCAS, El Toro, but the engine flamed out at approximately 16,000 ft. and at a distance of some 10 miles south of the field. Capt. (b) (6) elected to eject from his aircraft. He piloted the aircraft to a position clear of all populated areas and when over water, he ejected at an altitude of 8500 feet. The ejection was successful and Capt. (b) (6) was subsequently rescued by the MCAS, El Toro rescue helicopter after approximately 5-10 minutes in the water.

After the pilot ejected, WF-3 made a 360 degree turn to the right and crashed at sea about 1 1/2 miles WSW of Laguna Beach, California at 33 degrees, 31 minutes North, 117 degrees, 50.5 minutes West. 13



PART VI - Damage to Aircraft

Since F4D-1 BuNo 139106 was lost at sea in 375 feet of water, it is impossible to determine the extent of impact damage to the aircraft.

For reasons to be discussed in part VII of this report, the engine of F4D-1 BuNo 139106 flamed out at 16,000 feet. There was no indication of damage to the aircraft prior to impact. The 360 degree turn after ejection is felt to have been caused by normal aerodynamic forces and not damage incurred by any control surface as a result of the ejection.

No attempt was made to recover F4D-1, BuNo 139106 for reasons indicated in enclosures (4a) and (4b).



## PART VII - The Investigation

The investigation for this accident was started almost before the accident occurred. The aviation safety officer was acting as the squadron operations duty officer on the morning of 19 November 1958. He heard Capt. (b) (6) call of a low fuel indication to his wingman over a remote controlled uhf radio transceiver which is installed in the squadron ready room and tuned to the squadron's assigned tactical operating frequency.

Rescue operations were started at this time by the squadron duty officer, who made a telephone call to MCAS El Toro tower informing them of the situation. No contact with the tower was attempted by Capt. (b) (6). After Capt. (b) (6) ejection, his wingman, 1Lt (b) (6) contacted El Toro tower informing them of the situation. Lt. (b) (6) continued to orbit the scene until the pilot had been picked up by the helicopter. The pilot landed about five miles West of the point of impact of the aircraft.

By early afternoon on 19 November a member of the accident board arrived at the scene of the crash aboard a Newport Harbor Life Guard Service Boat stationed at Corona Del Mar, California. Only small pieces of the plastic radome had been found afloat and were recovered. These were of no value to the board. A heavy odor of JP-4 was noted at the site which had been marked by a buoy placed by the U. S. Coast Guard earlier.

The pilot was picked up by the MCAS, El Toro helicopter 5 to 10 minutes after he hit the water. Also at the scene, and within five miles of the spot the pilot landed, were two rescue boats. Capt. (b) (6) was

PART VII (Cont.)

taken to the station dispensary at MCAS, El Toro. X-rays were taken but no apparent injuries were noted. Interrogation of the pilot revealed the following facts: ENCL (5)

1. Pre-flight inspection, start, and climb to altitude were normal. Fuel transfer from external tanks was normal at this time.
2. Total afterburner time during this flight was roughly twenty minutes. Total time from take-off to crash was 30-35 minutes.
3. After about twenty-five minutes of flight a fuel check revealed that the aircraft had 1200-1500 pounds of fuel remaining internally and 2200 pounds of fuel remaining externally. The Capt. (b) started a turn at military rated power to allow his wingman to join and to allow his internal tanks to fill from the external tanks. Since the J-57 engine burns fuel from the main cells faster than it can be transferred from the external tanks when in afterburner operation, Capt. (b) did not consider this low reading abnormal in view of extensive afterburner operations. About five minutes later another fuel check showed about 200 pounds internal fuel and still over 2000 pounds external.
4. The pilot immediately reduced power to idle and headed for MCAS El Toro in a maximum range glide. Several attempts to transfer fuel were made. A check showed that each of the external tanks had an equal amount of fuel.
5. At 16,000 feet the internal fuel gauge read zero. The fuel boost pump failure warning light came on, followed by the main fuel pump



PART VII (Cont.)

- failure warning light, and subsequently the engine flamed out.
6. Three airstarts were attempted, two in the normal fuel system and one in the manual fuel system, to no avail.
  7. Capt. (b) turned his aircraft toward the sea and when clear of land ejected at 8500 feet.
  8. All ejection and survival equipment functioned properly with the exception of the PK-2 life-raft. The raft had a slow leak caused by the CO2 bottle connection and firing mechanism rubbing against the raft while stowed in the parachute assembly. The pilots AFH-5, equipped with rope-trap and Hardinen retention kit, was retained by the pilot. The pilot was not wearing his life vest.
- Yellow sheets and aircraft logs revealed one previous fuel system discrepancy in the preceding thirty days. This discrepancy was fuel streaming from the port external tank in flight. A total of approximately 800 pounds of fuel was lost due to this during a 1.7 hour flight. The fuel line connection at the tank was changed and no further trouble has been noted (see enclosure (7)). Fuel samples were taken from other squadron aircraft and also the refueler trucks for the purpose of determining the likelihood of fuel contamination. Results offered no proof of significant fuel contamination which could be regarded as a possible cause of the accident.

A detailed discussion was held with the Pratt-Whitney field representative and a thorough study of the history of F4D-1 fuel system

1710

PART VII (Cont.)

failures was made.

Interrogation of Capt. (b) (6) wingman disclosed little additional information. He did say however, that at no time did he notice fuel leaking from Capt. (b) (6) plane. ENCL (6)



## PART VIII - The Analysis

The engine of F4D-1 BuNo 139106 flamed out due to fuel starvation. A fuel indication of zero closely followed by the sequence of failure lights as related in Part VII offers ample proof of a fuel starvation flame-out.

A malfunction caused the external tanks to stop transferring after normal transfer had been started. The fact has been established in part VII that at the time of the flame-out and subsequent ejection there was an indication of over 2000 pounds of fuel remaining in the external tanks. Proper technique was used in the attempts to transfer this fuel but to no avail.

Since the aircraft was not recovered, it is impossible to establish what component caused the failure.

By Capt. (b) (6) statement it is indicated that he lost approximately 1800 pounds of fuel during a 5-10 minute period at military rated power. Normal fuel flow at this power setting and altitude is less than 50 pounds per minute. No fuel leakage was noted by Capt. (b) (6) wingman. A check of Lt. (b) (6) fuel shows that at the time of the flame-out the fuel indications of the two aircraft were within three to four hundred pounds of each other. This small difference can easily be explained by the different fuel consumption of engines and varied pilot techniques of fuel management.

Since no other fuel checks were made and the gauge appears to have been working normally at the end, to wit, a reading of empty closely followed

PART VIII (Cont.)

by a flame-out; the board can find no satisfactory answer for this sudden fuel drop. The possibility, therefore, of a fuel gauge malfunction, at least intermittently, does exist.

The sudden problem of low internal fuel and being unable to transfer external fuel presented a definite emergency to the pilot. His reactions to the situation and attempted corrective actions are considered proper. Capt. (b) (7) decision to eject after flame-out, and his decision to remain with the aircraft until clear of all populated areas before ejection was consistent with squadron and 3dMAW policies.



## PART IX - Comments and Recommendations

### COMMENTS:

On the basis of the facts revealed by the investigation and the analysis of the evidence, the board offers these comments:

1. Material failure is considered a contributing factor to this accident.

The board concluded from the investigation that the external tanks did not properly transfer all their fuel. Fuel readings as stated in enclosure (5) also indicate a possible fuel gauge malfunction. Since the aircraft was not recovered, the board cannot determine to what degree these malfunctions contributed to the accident.

2. Pilot factor must be considered in this case. Because of the nature of the flight (i.e., section tactics), his attention might (b) (5)

(b) (5)

(b) (5)

The opinion of this board

(b) (5)

### RECOMMENDATIONS:

As a possible means of preventing future accidents of this kind, the board recommends:

1. Since the exact component failure in this accident is unknown, no corrective recommendations can be made.
2. The board recommends that a low fuel warning light be incorporated in the F4D type aircraft. Other service type high performance jet aircraft have a



PART IX (Cont.)

low fuel warning system incorporated with good results and a similar system in the F4D could have prevented this, and like accidents.

3. Proper management of fuel is a function of the human element. Existing squadron procedures on this subject are adequate and no specific recommendations are made. This squadron has re-emphasized the necessity for each pilot to constantly monitor his fuel supply by making this item the subject of a flight safety officer's briefing. Pilots have also been reminded of existing regulation in regards to wearing of life vest regardless of intentions of over-water flight.

STATEMENT OF AIRCRAFT MAINTENANCE OFFICER

F4D-1 Bureau Number 139106 was received at this squadron on 7/16/58, with Pratt and Whitney J-57 Engine, Serial Number P627025 installed. The total time since acceptance of the aircraft was 43.5 hours, prior to the final flight. Total engine time since new was 53.1. The aircraft had flown 13.1 hours in the past month.

Investigation of the past maintenance of the subject aircraft indicated the only pilot "squawk" which would be of interest pertaining to a malfunction of the fuel system occurred on 31 October 1958, when the left external tank streamed fuel on transfer, and a loss of 800 pounds was noted on a flight of 1.7 hours. This was a direct result of removing both external tanks in order to rework the Aero 7 A nylon racks on the 30th of October. This discrepancy was corrected by repositioning the fuel transfer hose on the external tank and the aircraft flew 10 sorties, for a total of 13.1 hours with no further malfunctions reported on the fuel system.

The fuel transfer system in the F4D is basically simple. However, items noted in Douglas Aircraft Service Reports indicate possible areas of malfunction of the transfer system. The transfer system is initiated when the pilot actuates an external fuel transfer switch located on the right hand console in the cockpit. This in turn opens a transfer valve, which allows 9th stage compressor air to be directed to both external tanks for pressurization to transfer of fuel. Should this valve fail to open due to an electrical failure, a spring loaded solenoid, forces it to

3  
2  
31

STATEMENT OF AIRCRAFT MAINTENANCE OFFICER (Cont.)

the open side, thus making it a fail safe type valve. Should the fuel level control valves, located in both left, and right main cells fail to open, fuel will not be transferred. The valves operate on a float type principal, and when the fuel level drops  $2\frac{1}{2}$  to 3 inches the valves open allowing fuel to be admitted from the external source.

There is a history of sticking of the override weights on the fuel level control valves in early airplanes, but in each case only one of the two external tanks failed to transfer. However, there is a probability that multiple failures could result in failure to transfer from both tanks. The same situation might apply should the vacuum relief valve located on the upper part of the nose section of the external tank fail to close, which would cause a loss of tank pressurization.

If the 9th stage air line and/or associated plumbing which pipes compressor air to the external tanks for pressurization became disconnected or ruptured a failure to transfer would result. Failure to transfer could also occur if only one tank pressure line became separated. The amount of air required to pressurize, and at the same time overcome the leak of a rupture would not be available unless the engine was operated at very high power settings. At altitude it is questionable that transfer could be effected at all in the event of a pressure line rupture.

This squadron is operating on the Planned Progressive Maintenance



STATEMENT OF AIRCRAFT MAINTENANCE OFFICER (Cont.)

System, by authority of (BuAer msg 072044Z) March 58, and PPM cards 54, through 58, were completed on 18 November. The external fuel system was inspected and checked on cards 39 and 41, completed on 10/17/58. No other malfunctions have been noted on the "Yellow Sheets" pertaining to the fuel system other than those previously described.

In conclusion, a malfunction of the external fuel system could have occurred. A malfunction of the fuel quantity indicating system could also have occurred, for, as noted in the pilots statement, he reported a sudden loss from 1500 pounds to 200 pounds, of internal fuel in an estimated 5 to 7 minutes, which is not normal fuel consumption in military power at his altitude. Should the fuel quantity indicator have stuck in one position previously he would get an erroneous reading.

An examination of all other squadron aircraft uncovered no significant fuel contamination or transfer problems.

Since salvage of the aircraft was not deemed economical or feasible, and in view of the pilots statement, the contribution to the accident of material failure and/or maintenance cannot be considered undetermined.

(b) (6)

(b) (6)

Major USMC

Aviation Experience: Over 20 years A/C Maintenance.

Credibility - Very Good

Enclosure (7) to VMP (AW)-513 AAR 1-58

# PILOT'S HISTORY

<u>SQUADRON ASSIGNED</u>	<u>DATES ATTACHED</u>	<u>MODEL</u>	<u>HOURS</u>	<u>TYPE</u>	<u>PROFICIENCY/OPERATIONAL</u>
Training Command	June 56 to Nov 57	T-34	54.5	Student	0
		T-28	121.0	Student	0
		SNJ	52.0	Student	0
		TV-2	44.0	Student	0
		F9F-5	56.0	Student	0
VMF(AW)-542	Dec 57 to Sep 58	F3D-2	110.4	VF(AW)	0
		F9F-8	13.6	VF	0
		F4D-1	22.7	VF(AW)	0
VMF(AW)-513	Sep 58	F4D-1	40.0	VF(AW)	0

Enclosure (8) to VMF(AW)-513 AAR 1-58

SPECIAL HANDLING REQUIRED  
IN ACCORDANCE WITH PARA  
65, OPNAVINST 3740.6C



MARINE ALL WEATHER FIGHTER SQUADRON 513  
MARINE AIRCRAFT GROUP 15  
31 MARINE AIRCRAFT WING, AIRMFPAC  
MCAS, EL TORO (SANTA ANA), CALIFORNIA

VMP(AN)-513 (EXT 247)

FLIGHT SCHEDULE

WEDNESDAY 19 NOVEMBER 1958

BRIEF	STD	EST	MODEL	MOD	PILOT	AREA	MISSION	CALL
0800	0900	1030	F4D-1	WF	LT (b) (6)	LOCAL	FAM 3	1-0
					CAPT (b) (6)	LOCAL	SEC TAC	2-0
					LT (b) (6)		" "	2-2
0900	1000	1130	F4D-1	WF	MAJ (b) (6)	LOCAL	SEC TAC	3-0
					LT (b) (6)		" "	3-2
					LT (b) (6)	LOCAL	SEC TAC	4-0
					LT (b) (6)		" "	4-2
1200	1300	1430	F4D-1	WF	LT (b) (6)	LOCAL	SEC TAC	5-0
					LT (b) (6)		" "	5-2
1300	1400	1530	F4D-1	WF	LT (b) (6)	LOCAL	FAM 2	6-0
					LT (b) (6)		CHASE	6-2
					CAPT (b) (6)	LOCAL	SEC TAC	7-0
					LT (b) (6)		" "	7-2
1400	1500	1630	F4D-1	WF	LT (b) (6)	LOCAL	FAM 1	8-0
					MAJ (b) (6)		CHASE	8-2
SDO: LT (b) (6)								
ODO: CAPT (b) (6)								
RDO: CAPT (b) (6)								
DUTY SECTION THREE								

MOFT: TO BE ASSIGNED  
LINK: 1300 - LT (b) (6)  
1430 - LT (b) (6)

BY COMMAND OF (b) (6)  
(b) (6)

Captain, U. S. Marine Corps  
Operations Officer

ENCLOSURE (2) TO VMP(AN)-513 AAR 1-58

31

SPECIAL HANDLING REQUIRED  
IN ACCORDANCE WITH PARA  
4, COMNAVINST 530.6C



MM M15 DE WG NR 28  
M 201812Z  
FM CG THIRD MAW  
TO COMNAVAIRPAC  
INFO CNO  
BUAER  
NAVSACFEN  
COMNAB ONE ONE  
CG AIRFMFPAC  
MAG ONE FIVE  
BAR EL SEGUNDO  
MARALLWEAFITRON FIVE ONE THREE

BT  
VMF/AW-513 192105Z X NAVAVSAFFETY CEN 192310Z NOTAL X ACFT LOCATED  
35 DEG 31 MIN N 117 DEG 50.5 MIN W AT 69 FATHOM LEVEL X MARKED BY  
BALSA MARKER X REQUEST ASSISTANCE SALVAGE

BT  
CFN VMF/AW-513 192105Z 192310Z 53 31 117 50.5 69  
20/1812Z NOV RBWDOA  
20/1120U NOV WG RLB K  
WG DE M15 R NR 28 20/1121U NOV 58 EB(AR)

DIST: GAINES

INFO: S-4

513

ENGO

CO

S-3

SAFTO

SUPO

H&MS

COMM NOTE: REFERENCE

ON REVERSE

CERTIFIED TRUE COPY

(b) (6)

*mag usmc*

ENCLOSURE (42) TO WFO(W)-513 OR 1-51

53  
SPECIAL HANDLING REQUIRED  
IN ACCORDANCE WITH PARA  
14 OF NATINST 330.10

MIS DE WG NR 39

N 202233Z

FM CG THIRD MAW

TO COMNAVAIRPAC

INFO CNO

BIAER

NAVAVSACFEN NORVA

COMNAB ONE ONE

CG AIRFMFPAC

MAG ONE FIVE

BAR EL SEGUNDO

MARALLWEAFITRON FIVE ONE THREE

BT

CANCEL MY 201812Z X IN VIEW PROBABLE CAUSE CRASH FUEL TRANSFER  
PROBLEMS X DO NOT CONSIDER SALVAGE OF AIRCRAFT ECONOMICALLY  
FEASIBLE X LT COMDR (b) (6) NAVSAFCEN CONCURS

BT

CFN 201612Z

20/2233Z NOV RBWDOA

20/1450U NOV DE WG APMK

WG DE MIS R NR 39 20/1458U NOV 58 AR

DIST: GAINES

COMM NOTE: REF. ON REVERSE.

INFO: S-4

513

ENGO

CO

S-3

SAFTO

SUPD

HAMS

CERTIFIED A TRUE COPY

(b) (6)

*Mag USMC*

ENCLOSURE (4s) TO WMP(AW)-513 AAR 1-58

13  
SPECIALLY HANDLING REQUIRED  
IN ACCORDANCE WITH PARA  
16, OPNAVINST 110.12



SECTION A - IDENTIFICATION

1. FROM (Name and mailing address of activity) <b>U. S. Marine Corps Air Station, El Toro (Santa Ana), California</b>										2. MON. NUMBER <b>22-58</b>	
3. REPORT FILED BY (Name and Signature of Medical Officer) DATE <b>(b) (6) 12-8-58</b>										4. FORWARDED (Name and Signature of Appointing Authority) DATE <b>(b) (6) 12-8-58</b>	
5. TYPE OF MISAP <input checked="" type="checkbox"/> ACCIDENT <input type="checkbox"/> GROUND ACCIDENT <input type="checkbox"/> INCIDENT										6. TIME AND ZONE <b>0950 U</b>	
7. DATE <b>11-19-58</b>										8. GEOGRAPHICAL LOCATION <b>14 miles WSW, Laguna Beach, Calif.</b>	
9. MODEL A/C <b>F4D-1</b>		10. BUONO <b>139105</b>		11. NO. OF OCCUPANTS <b>1</b>		12. TYPE ACCT. <b>C-6</b>		13. DAMAGE CODE <b>A</b>		14. UNIT OPERATING A/C <b>TMP(AW)-513</b>	
15. INDIVIDUALS INVOLVED - USE ADDITIONAL SHEETS IF REQUIRED. NAME (Last, first and middle initials)			16. UNIT TO WHICH ATTACHED			17. RANK, RATE		18. FILE/SERV. NO. DESIGNATOR		19. BILLET	
IN CONTROL OF A/C <b>(b) (6)</b>			<b>TMP(AW)-513</b>			<b>Capt</b>		<b>(b) (6)</b>		<b>Pilot</b>	
20. BRANCH OF SERVICE			21. INJURY CODE			22. DISPOSITION					
<b>USMC</b>			<b>D</b>			<b>C</b>					
23. CLARIFICATION OF ITEMS 15-22 WHEN NECESSARY											
24. MODEL - OTHER A/C IF INVOLVED				25. NO. OF OCCUPANTS		26. UNIT OPERATING A/C		27. DAMAGE CODE		28. REPORT NO.	
<b>None</b>				<b>1</b>		<b>TMP(AW)-513</b>		<b>A</b>		<b>22-58</b>	

29. DETAILED NARRATIVE ACCOUNT OF ACCIDENT (Use additional 5 x 8 1/2 inch plain sheets if required)

Enclosure (1) Medical Officer's Narrative Account  
Enclosure (2) Conclusions and Recommendations

SECTION B - MEDICAL OFFICER'S QUESTIONNAIRE

YES	NO	DID THE FLIGHT SURGEON:	(If "NO" state reason in space below.)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	1. VISIT THE SCENE OF THE MISAP	Accident occurred over water. No wreckage recovered. Pilot picked up by helicopter unaccompanied by physician.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	2. PARTICIPATE FULLY IN THE FIELD INVESTIGATION	Aircraft lost at sea. No parts recovered.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3. PARTICIPATE FULLY IN THE DELIBERATIONS OF THE T/C ACCIDENT BOARD	
GIVE APPROXIMATE NUMBER OF HOURS SPENT BY THE FLIGHT SURGEON:		4. IN FIELD INVESTIGATION	5. IN BOARD DELIBERATIONS
		<b>None</b>	<b>4 hrs.</b>
		6. IN PREPARATION OF THIS REPORT	
		<b>9 hrs.</b>	
7. REPORT PREPARATION CHECK LIST			
<input checked="" type="checkbox"/> ALL PARTS OF FORM COMPLETED <input type="checkbox"/> SURVIVORS' NARRATIVES <input type="checkbox"/> PHOTOS <input type="checkbox"/> CONCLUSIONS AND RECOMMENDATIONS <input type="checkbox"/> REQUIRED COPIES FURNISHED			



SECTION C - PHYSIOLOGICAL, HUMAN ENGINEERING, DESIGN, SOCIO-PSYCHOLOGICAL, AND TRAINING FACTORS WHICH CONTRIBUTED IN SOME DEGREE TO THIS A/C ACCIDENT, INCIDENT, OR GROUND ACCIDENT

NAME OF INDIVIDUAL (Last, first, middle)

MODEL A/C

74D-1

(b) (6)

Check E-Established, S-Suspected, or P-Present for each factor selected. Additional 8X10 1/2 plain sheets will be used for the supporting account of items checked below. Identify each statement with the factor and section identification (e.g., C1, C2, etc.). Attach all sheets pertaining to these factors to this form upon completion.

E	S	P	✓ FACTORS	E	S	P	✓ FACTORS
			PHYSIOLOGICAL:				SOCIO-PSYCHOLOGICAL: (Sectional stress free duty sources)
			1. Physically incapacitated in flight				29. Expeditions/Delays
			2. "G" forces				30. Weather
			3. Environmental stress - External				31. Mechanical Problems <b>Enclosure (3)</b>
			4. - Internal				32. Social and working relationships
			5. Dybarism/explosive decompression				33. Personal comfort
			6. Diet				34. Regulations
			7. Fatigue				35. Facilities
			8. Hypoxia				36. Navigation
			9. Related illness				37. Duty assignment
			10. Vertigo/Disorientation/Illusions				38. Personality traits
			11. Hyperventilation				NON-STRESS FACTORS:
			12. Drugs				39. Faulty attention
			13. Physical state				40. Poor judgement <b>Enclosure (3)</b>
			14. OTHER:				41. Forgetfulness
			HUMAN ENGINEERING AND DESIGN:				42. OTHER SOCIO-PSYCHOLOGICAL FACTORS
			15. Personal equipment				
			16. Displays and/or controls				
			17. Work arrangement <b>Enclosure (3)</b>				
			18. Working environment				
			19. Habit interference				TRAINING FACTORS:
			20. OTHER:				43. Physiological training
			SOCIO-PSYCHOLOGICAL: (Sectional stress free non-duty sources)				44. Emergency Procedures training
			21. Pregnancy				45. Survival and rescue training
			22. Illness or death				46. Refresher training
			23. Arguments				47. Transition training
			24. Elated/Depressed state				48. OTHER:
			25. Personal habits - Drinking				
			26. - Sex				
			27. - Gambling				
			28. - Debt				

SECTION D - AIR CREW DATA (fill in where applicable)

1. Flight time past 30 days	20.7 hrs.	7. Total time in model	59.9
2. Flight time last 24 hours	2.6 hrs.	8. Number of days grounded last month, give reason	0
3. Number of flights in last 24 hours	3	9. Number of and dates of previous accidents	0
4. Time at controls this flight	0.6 hrs.		
5. Number of hours duty last 24 hours	8 hrs.		
6. Total flight time	660.0 hrs.		

SECTION E - CONTRIBUTING FACTORS AND THEIR ANALYSES (As condensed from Part I, Sect. D and Part VIII of the AIR)

NOTE: Fill in this section only on that set of forms prepared for FIRST individual listed in Section A, i.e., 15(a). Attach additional sheets as necessary.

1. Failure of proper transfer of fuel from the external tanks to the main fuel cell is a contributing cause of this accident. In addition to this mechanical failure the

(b) (5) There is no information to substantiate these possibilities as the aircraft was lost at sea.  
2. (b) (5) is suspected on the part of the aviator in  
(b) (5)

However, it is difficult to be too critical as the pilot was performing tactical maneuvers which would prevent his focusing his entire attention on only the fuel status.

SECTION F - SAFETY, PERSONAL, AND SURVIVAL EQUIPMENT  
Prepare a narrative account of damaged or failed items. Identify each item discussed (e.g., F1, F2, etc.).

Item and description (F1, F2, etc.)

MODEL A/G

F4D-1

GENERAL DESCRIPTION OF EQUIPMENT	AVAIL- ABLE		SPECIFIC MODEL OR TYPE	UTILIZED		FAILED		DESCRIPTION OF DAMAGE TO EQUIPMENT
	YES	NO		YES	NO	YES	NO	
1. Shoulder harness	X		T-type 5438856	X		X		
2. Lap belt	X		auto-release	X		X		MS-15036-24
3. Inertia reel	X		2 3388240	X				
4. G-Suit	X		G-2	X				
5. Pressure suit-full or partial		X						
6. Exposure suit		X						
7. Flight suit (Other than above)	X		UIL-S-53906 Summer	X				
8. Helmet	X		ATH-5	X		X		
9. Goggles/Eyeshield	X		visor APS-5	X				
10. Shoes	X		Field	X				
11. Gloves	X		Summer flight	X				
12. Life vest	X		MS-2					Life vest not worn.
13. Life raft	X		PK-2	X		X		A leak was present around the insertion of O2 bottle.
14. OTHER:								
15. SIGNAL DEVICE - Flare (Night)	X		MARK-2 EMD-Q		X	X		Lost - became disconnected from raft.
16. Flare (Day)	X		" " " "		X	X		" " " "
17. Dye marker	X		Life vest dye marker		X	X		" " " "
18. Radio		X						" " " "
19. Flashlight		X						" " " "
20. Mirror	X		MARK-2					" " " "
21. OTHER:								
22. SURVIVAL GEAR - Knife	X		Shunting		X			
23. First aid kit	X				X	X		
24. Shelter	X		Shelter of PK-2		X			Lost - became disconnected from raft.
25. Food	X				X	X		Life raft tablet ration lost.
26. OTHER:								
27. RESCUE - Vehicle	X		Helicopter HRS-2	X		X		
28. Sling, Net, Stretchers	X		Sling	X		X		
29. OTHER:								

SECTION G - DETAILED EQUIPMENT QUESTIONNAIRE

1. MARK - MODEL OR TYPE <b>A 13 A</b>		2. MODIFICATIONS, IF ANY <b>Hardman retention kit</b>	
3. REGULATOR - MODEL OR TYPE <b>F-376105-1</b>		4. MODIFICATIONS, IF ANY <b>None</b>	
5. PREFLIGHTED BY USCR <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		6. IF NO, WHY NOT <b>None</b>	
7. LIST DISCREPANCIES NOTED BY PREFLIGHT CHECK <b>None</b>			
8. OXYGEN SUPPLY: PRIOR TO FLIGHT <b>5</b> LITERS (Liquid) <b>P.S.I. (Gas)</b>		TIME OF ACCIDENT <b>Unknown</b>	
9. WAS OXYGEN IN USE AT TIME OF ACCIDENT? <input type="checkbox"/> YES <input type="checkbox"/> NO		10. IF YES, WAS SELECTOR SETTING <input checked="" type="checkbox"/> 100% <input type="checkbox"/> NORMAL	
11. WAS ALL OXYGEN EQUIPMENT NECESSARY FOR THIS FLIGHT AVAILABLE? IF NO, LIST ITEMS AND REASON WHY. <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		12. WAS OXYGEN MASK REMOVED AT ANY TIME IN FLIGHT? IF YES, GIVE DURATION AND REASON. <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES	
13. TYPE OUTFIT RELEASE DEVICE <b>Irving MARK 5</b>		14. TYPE HARNESS RELEASE DEVICE <b>Lap belt MS-15036-24</b>	
15. WERE DIFFICULTIES ENCOUNTERED WITH RELEASE DEVICES? IF YES, STATE DIFFICULTIES, WHEN ENCOUNTERED AND CAUSE. <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		16. WERE RELEASE DEVICES ACTIVATED? <b>On a station</b>	
17. WERE DIFFICULTIES ENCOUNTERED AFTER ACTIVATING RELEASE DEVICES? IF YES, STATE DIFFICULTIES, WHEN ENCOUNTERED AND CAUSE. <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		18. WAS LIFE VEST INFLATED PRIOR TO ACTIVATING RELEASE DEVICES? IF YES, WHAT DIFFICULTIES DID THIS PRODUCE? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <b>Life vest not available.</b>	

WHEN HANDLING EQUIPMENT  
IN ACCORDANCE WITH 34M  
OPNAVINST 1750.4C



SECTION G - DETAILED EQUIPMENT QUESTIONNAIRE (Continued)

NAME OF ORGANIZATION (Last, first, middle)

MODEL A/C

PA-1

(b) (6)

RESTRAINT HARNESS	19. INTEGRATED HARNESS SYSTEM, MODEL/TYPE <b>Not available</b>		20. INTEGRATED? <input type="checkbox"/> FULL <input type="checkbox"/> PARTIAL		21. MODIFICATIONS, IF ANY STATE REASON	
	22. DID INTEGRATED HARNESS FIT PROPERLY? IF NO, LIST DISCREPANCIES IN FIT AND GIVE REASONS THEREFOR <input type="checkbox"/> NO <input checked="" type="checkbox"/> YES					
	23. INTEGRATED HARNESS FITTING WAS CONDUCTED BY: <input type="checkbox"/> BEARER <input type="checkbox"/> FLIGHT SURGEON <input type="checkbox"/> PARACHUTE RIGGER <input checked="" type="checkbox"/> AVIATION EQUIPMENT OFFICER <input type="checkbox"/> OTHER					
	24. IF SHOULDER HARNESS WAS USED, WAS IT: <input type="checkbox"/> LOCKED <input type="checkbox"/> UNLOCKED <input type="checkbox"/> TIGHT <input type="checkbox"/> SLACK <input type="checkbox"/> OTHER CONDITION					
HELMET	25. TYPE HELMET <b>AP-5</b>		26. LIST PRESCRIBED MODIFICATIONS <b>Hardman retention kit, nape strap.</b>			
	27. OTHER MODIFICATIONS AND REASON FOR THEM <b>None</b>		28. DID HELMET FIT PROPERLY? IF NO, GIVE REASON <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			
	29. HELMET FITTING WAS CONDUCTED BY: <input type="checkbox"/> BEARER <input type="checkbox"/> FLIGHT SURGEON <input checked="" type="checkbox"/> PARACHUTE RIGGER <input type="checkbox"/> AVIATION EQUIPMENT OFFICER <input type="checkbox"/> OTHER					
	30. TYPE CHUTE <b>PA-5</b>					
PARACHUTE	31. LAST PACKING DATE <b>11-17-68</b>		32. MODEL/TYPE BAILOUT OXYGEN <b>N-383-37591A</b>		33. AUTOMATIC RIPCORD, IF INSTALLED (Model and type) <input type="checkbox"/> NONE <b>Irvine baro release MARK V</b>	
	34. DID AUTOMATIC RIPCORD FAIL? IF YES, WHY? <input type="checkbox"/> NO				35. WAS RIPCORD ACTIVATION <input type="checkbox"/> MANUAL <input checked="" type="checkbox"/> AUTOMATIC	
	36. IF MANUALLY ACTIVATED STATE REASON AND ANY DIFFICULTIES ENCOUNTERED					
	37. DID CHUTE OPEN IMMEDIATELY? IF NO, GIVE REASON <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO				38. ALTITUDE THAT CHUTE OPENED <b>8000</b> FEET	
	39. OPENING SHOCK WAS: <input type="checkbox"/> SLIGHT <input checked="" type="checkbox"/> MODERATE <input type="checkbox"/> SEVERE		40. BODY ATTITUDE AT OPENING <b>Face down</b>		41. CONDITION OF CHUTE AFTER OPENING <b>chute not</b> <b>No apparent damage - recovered</b>	
	42. CHUTE OSCILLATION PRESENT: <input type="checkbox"/> NONE <input type="checkbox"/> SLIGHT <input type="checkbox"/> MODERATE <input checked="" type="checkbox"/> SEVERE		43. IF OSCILLATION WAS PRESENT, HOW WAS IT STOPPED? <b>as low</b> <b>Oscillation at altitude stopped itself / altitude.</b>			
	44. WEATHER CONDITIONS DURING DESCENT (List in sequence) <b>Clear</b>				45. TOPOGRAPHY OF LANDING SITE <b>Landed in ocean.</b>	
	46. WAS BAILOUT OXYGEN CONNECTED? <input checked="" type="checkbox"/> BEFORE EXIT <input type="checkbox"/> AFTER EXIT <input type="checkbox"/> NO		47. WAS BAILOUT OXYGEN USED? IF NOT, WHY <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			
	48. WHEN WAS IT ACTIVATED? <input checked="" type="checkbox"/> BEFORE EXIT <input type="checkbox"/> AFTER EXIT		49. GIVE DIFFICULTIES ENCOUNTERED WITH BAILOUT OXYGEN AND THEIR CAUSE, IF ANY <b>None</b>			
	50. WAS CHUTE HARNESS <input checked="" type="checkbox"/> TIGHT <input type="checkbox"/> SNUG <input type="checkbox"/> LOOSE		51. WAS A SITTING POSITION IN SLING OBTAINED DURING DESCENT? IF NOT, WHY <input type="checkbox"/> NO <input checked="" type="checkbox"/> YES <input type="checkbox"/> NOT ATTEMPTED			
	52. SEAT CUSHION IF PROVIDED (Model/Type) <input type="checkbox"/> NONE <b>MF-1A</b>		53. WAS PARACHUTE LANYARD CONNECTED TO LIFE VEST D RING? IF NOT, WHY <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES <b>No life vest available.</b>			
	54. LIST TYPE OF PARACHUTE TRAINING (Include model and type) <input type="checkbox"/> NONE <b>2 years as parachutist with 82nd Airborne Division (U.S. Army) - 1947 to 1950. Has had 40 previous jumps.</b>					
55. IF ATTEMPT WAS MADE TO RELEASE PARACHUTE DURING DESCENT, WAS RELEASE ACTIVATED SUCCESSFULLY? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO				56. IF NO, GIVE REASON		
OTHER	57. IF G-SUIT, EXPOSURE SUIT, FULL OR PARTIAL PRESSURE SUIT WAS WORN, DID IT FIT PROPERLY? IF NOT, LIST DISCREPANCIES IN FIT AND GIVE REASONS THEREFOR. <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <b>G-2 coverall was worn. No discrepancies.</b>					
	58. WAS G-SUIT EQUIPPED WITH A SPRING-LOADED DISCONNECT ADAPTER? IF NO, GIVE REASON. <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO					
	59. LIST ALL ITEMS OF NON-STANDARD CLOTHING OR SURVIVAL EQUIPMENT UTILIZED <b>None</b>					
	60. WAS ANY ITEM OF EQUIPMENT LOST? IF YES, STATE ITEM, WHEN LOST, AND REASON FOR LOSS. <input type="checkbox"/> NO <input checked="" type="checkbox"/> YES <b>Items already noted in Section F were lost from PA-2 raft. Only a section of cord remained on the life raft where packet was attached.</b>				61. WAS ANY ITEM OF EQUIPMENT DISCARDED? IF YES, STATE ITEM, WHEN DISCARDED, AND REASON FOR DISCARD. <input type="checkbox"/> NO <input checked="" type="checkbox"/> YES	

REMARKS CONCERNING EQUIPMENT  
OR DISCREPANCIES WITH FORM  
8, OPNAVINST 8750-8



SECTION 1 - EMERGENCY EXIT FROM A/C AND SURVIVAL FACTORS

NAME OF INDIVIDUAL (Last, first, middle)

MODEL A/C

740-1

S	E	3-SUSPECTED, E-ESTABLISHED	REMARKS
		1. EJECTION - Attempted	A controlled ejection at altitude with any difficulties.
		2. - Accomplished	
		3. - Through canopy	
YES	NO	4. EJECTION DIFFICULTIES ENCOUNTERED	IF YES, EXPLAIN DIFFICULTIES
		4. - Prior to	
		5. - During	
		6. - Subsequent to	
		7. Give type and model of seat used	WAF 602000-1
		8. BAILOUT - Attempted	
		- Accomplished	
9. ALTITUDE AT TIME OF EXIT (feet)		10. ALTITUDE OR MANEUVER OF A/C AT EXIT OR IMPACT	
ABOVE SEA LEVEL 8500 ABOVE TOPOGRAPHY 8500		20 Degrees nose-down slide	
11. COLLISION OF A/C WITH		13. CONTROLLED	
<input type="checkbox"/> GROUND <input type="checkbox"/> WATER <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> UNKNOWN		<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> UNKNOWN	
14. POWER		15. WHEELS	
<input type="checkbox"/> ON <input type="checkbox"/> OFF		<input type="checkbox"/> UP <input type="checkbox"/> DOWN	
16. FLAME		17. FLAME	
<input type="checkbox"/> FULL <input type="checkbox"/> UP <input type="checkbox"/> PARTIAL		<input type="checkbox"/> FULL <input type="checkbox"/> UP <input type="checkbox"/> PARTIAL	
18. CARRY POSITION AT EXIT OR IMPACT		19. AIR TEMP	
<input type="checkbox"/> OPEN <input type="checkbox"/> CLOSED <input type="checkbox"/> JETISONED		72 °F	
20. SEA STATE		21. WATER TEMP	
Calm		65 °F	
22. TIME IN WATER		23. TIME IN BAY	
5 min.		5 min.	
24. EXIT USED		25. IS THIS THE RECOMMENDED EXIT? IF NO STATE REASON FOR CHOICE.	
<input type="checkbox"/> YES <input type="checkbox"/> NO		<input type="checkbox"/> YES <input type="checkbox"/> NO	
26. DIFFICULTIES WITH THIS EXIT WERE		27. STATE NATURE OF DIFFICULTY	
<input type="checkbox"/> IN REACHING <input type="checkbox"/> IN OPENING <input type="checkbox"/> IN EXITING			
28. BODY POSITION DURING EXIT			
BAIL OUT OR COLLISION WITH WATER OR GROUND			

29. LIST OTHER FACTORS NOT INDICATED ABOVE WHICH AFFECTED EXIT FROM A/C

SURVIVAL FACTORS: Check factors below which are appropriate for this accident. Prepare a detailed narrative account of the factors checked below and attach to this form. Identify each item discussed by item number (e.g., B50, B51, etc.)

COMMUNICATIONS:		MAINTAINING BODY TEMPERATURE:	
30. Communicated position prior to mishap		50. Items used as shelter	
31. Witnesses at scene		51. Items used as clothing	
32. Electronic signal devices		52. Fire	
33. Visual signal devices		53. OTHER:	
34. Auditory signal devices		ENVIRONMENTAL HAZARDS:	
35. OTHER:		54. Exposure to natural toxins	
TRAVEL:		55. Exposure to dangerous animals	
36. LAND		56. Unfriendly native population	
37. WATER		57. OTHER:	
SHELTER:		MORALE:	
38. Life raft		58. Isolation	
39. Parachute		59. Psychological shock	
40. A/C structure		60. Lack of motivation to survive	
41. Natural shelter		61. Dizziness	
42. Man-made shelter		62. Boredom, activities, and group	
43. OTHER:		63. OTHER:	
WATER SOURCE:		FOOD SOURCE:	
44. Desalter kit, seawater or solar still		64. Desalter kit, seawater or solar still	
45. Rain, dew, snow, ice, etc.		65. Rain, dew, snow, ice, etc.	
46. Processed beverages		66. Processed beverages	
47. Canned, chopped, water breaker, etc.		67. Canned, chopped, water breaker, etc.	
48. Straws, ponds, wells, etc.		68. Straws, ponds, wells, etc.	
49. OTHER:		69. OTHER:	





"SPECIAL HANDLING REQUIRED  
IN ACCORDANCE WITH PARA 65  
OPNAV INST 3750.6C"

F4D-1 Bureau #139106  
19 November 1958  
MCAS, El Toro

MEDICAL OFFICER'S NARRATIVE ACCOUNT:

On 19 November 1958 at approximately 0910, CAPT (b) departed MCAS, El Toro (Santa Ana), California, on a scheduled section tactics in an F4D-1 aircraft, Bureau number 139106. Accompanying CAPT (b) was LT (b) (6). CAPT (b) was the section leader.

Prior to takeoff all preflight checks had been normal. With both internal and external fuel cells being full, the aircraft would be carrying over 8,000 pounds of fuel. During the tactics hop considerable afterburner was used and after being airborne about 20 minutes CAPT (b) noted he had approximately 2200 pounds remaining in his external tanks and about 1500 pounds in his main fuel cell. He did not consider this unusual while using afterburner as fuel is being consumed at a more rapid rate from the main fuel cell than it can be transferred from the external tanks. He checked his fuel gauge approximately five minutes later (during this period the afterburner was in use) and noted 2200 pounds in his external fuel tanks and approximately 200 pounds in his main fuel cell. Subsequent attempts to transfer fuel were unsuccessful. CAPT GRAY then reduced the throttle to idle, notified his wingman of the low fuel state and established a maximum range glide towards MCAS, El Toro. At approximately 16,000 feet the aircraft flamed out. Three attempts at a re-light were unsuccessful and CAPT (b) elected to abandon the aircraft. He turned back towards the ocean and notified his wingman by hand signal that he was going to eject. At 8500 feet and about 190 knots a successful ejection was made. LT (b) (6) notified El Toro tower of the ejection and gave the geographical location. LT (b) (6) orbited the area until the air-sea rescue helicopter arrived and then returned to El Toro.

The ejection went smoothly without difficulty and the parachute was deployed at about 8000 feet. CAPT (b) an experienced parachutist, noted rather severe oscillations at first but this stopped without dampening as he reached lower altitudes. CAPT (b) (6) removed his life raft prior to landing in the ocean and released himself from his parachute harness as his feet touched the water. He was not wearing a life vest as he had forgotten to put it on prior to the hop. He inflated his life raft, but found that it leaked badly. Fortunately, the air-sea rescue helicopter arrived within five or ten minutes after CAPT (b) had landed in the ocean some five miles from shore. A normal pickup with a sling was made by the helicopter without difficulty. CAPT (b) was then brought to the Station Hospital at MCAS, El Toro, where he was examined and found to have (b) (6)

(b) (6)  
(b) (6) He was grounded for 24 hours for psychological reasons and then returned to full duty.

After CAPT (b) abandoned the aircraft, it made a slow turn, struck the water and disappeared in less than a minute. Small portions of the plastic radome were recovered the same day near where the aircraft struck the water. A heavy odor of JP-4 was also noted where the aircraft struck the water (the site had been marked with a buoy by the U. S. Coast Guard).

ENCLOSURE (1) TO MCR 22-58.

MCAS, El Toro

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DATE 11-11-2010 BY 60322



"SPECIAL HANDLING REQUIRED  
IN ACCORDANCE WITH PARA 65  
OF NAV INST 3750.6C"

F4D-1 Bureau #139106  
19 November 1958  
MCAS, El Toro

CONCLUSIONS:

This accident was the result of mechanical failure of the aircraft and pilot error.

RECOMMENDATIONS:

1. A warning light should be installed in this aircraft which would denote a low fuel state in the main fuel cell when it occurs.
2. All life rafts should be carefully inspected and inflated to test for leaks whenever the parachute is repacked.
3. All pilots should wear life vests if there is a possibility they may be over water. This of course is squadron policy in VMF(AW)-513 and usually is checked by the squadron operations duty officer. A lapse of memory on the part of CAPT GRAY is the reason for his not wearing his life vest.

ENCLOSURE (2) TO MOR 22-58.

MCAS, El Toro

SPECIAL HANDLING REQUIRED  
IN ACCORDANCE WITH PARA  
65, OPERATING INSTRUCTIONS

"SPECIAL HANDLING REQUIRED  
IN ACCORDANCE WITH PARA 65  
OFNAV INST 3750.40"

F47-1 Bureau #139106  
18 November 1958  
MOAS, El Toro

SECTION 2:

(b) (5)

(b) (5)

Therefore, improper fuel  
management may be a causal factor in this accident.  
Evaluation of this point is difficult because, in addition,  
mechanical failure was present.

C-11: Inability to transfer fuel from the external tanks to the  
main fuel cell was a contributing factor of this accident.

(b) (5)

(b) (5)

C-10:

SPECIAL HANDLING REQUIRED  
IN ACCORDANCE WITH PARA  
65, OFNAVINST 3750.40

MOAS, El Toro

ENCLOSURE (3) TO MOR 22-58.